**TNHA Curriculum Planning Document** Subject: Science Year: 10

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| **Timescale** | **Autumn** | | | **Spring** | | | **Summer** | | |
| **Prior Learning (from KS2/3)** | Yr 7- What am I  Yr 7 - Sports Science  Yr 8- Hospital  Yr 8 – Farm  Yr 9- Cells  Yr 9- Organisation  Yr 9- Energy | Yr 7- Scientist  Yr 8- CSI  Yr 9- Bonding  Yr 9- Atoms  Yr 9- Quantitative chemistry | Yr 8 – Power  Yr 9- Atoms | Yr 7- What am I  Yr 8- Hospital  Yr 9- Cells  Yr 9- Organisation | Yr 7 – Oceans  Yr 7 – Sports  Yr 8 - CSI  Yr 9- Atoms | Yr 7- Cars  Yr 7- Space  Yr 8 – Theme | Yr 7- What am I  Yr 7- Dinosaurs  Yr 7- Zoo  Yr 9- Cells  Yr 9- Infections | Yr 7- Dinosaurs  Yr 7 – Oceans  Yr 8 - CSI  Yr 8 – Power  Yr 9- Bonding  Yr 9- Atoms | Yr 7 – Oceans  Yr 8- Disco  Yr 9- Energy |
| **Topic/ Unit title** | **Biology**  Biological Reactions (Bioenergetics)  Photosynthesis and Respiration | **Chemistry**  Chemical Reactions  Acids and Alkalis, Neutralisation, electrolysis, Salts | **Physics**  Atomic structure  Radiation, Half life, atomic structure. | **Biology**  Homeostasis & response  Reflex actions, Glucose control, Menstrual cycle | **Chemistry**  Rates of Reaction  Effect of temperature, pressure and concentration on rates of reaction. Collision theory. | **Physics**  Forces  Forces, resultant forces and velocity. Distance time graphs. Stopping distances. | **Biology**  Inheritance, variation & evolution  Genes, Inheritance, reproduction, Punnett squares, Evolution and Extinction | **Chemistry**  Organic Chemistry  Hydrocarbons, Alkene, Alkanes and Cracking. | **Physics**  Waves  The electromagnetic spectrum,  Properties of waves and uses. |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | The impact of exercise  The consequences of deforestation  Farming: The use of technology to help with world hunger.  Group work. | Group work.  The importance of alkali solutions in first aid kits in major cities.  Environmental impact of gaining/using metal ores. | Group work.  Safety in radiation.  Worlds responsibility for Chernobyl. | Beliefs around contraception  Focus on the ethics behind IVF  Group work. | Group work.  Industry use to increase cost effectiveness vs. Environmental impact. | Investigating stopping distances and factors that affect these in relation to driving cars unsafely.  Group work. | Genetic Engineering and cloning - Use understanding of cloning techniques to evaluate whether embryo cloning should be allowed.  Group work.  Evaluate the human impact on extinction. | Consider the impact of multiple chemical and industrial processes on the environment - including the combustion of hydrocarbons and the impacts of global warming and acid rain on the environment.  Group work. | Group work.  Industrial use of EM Spectrum.  The effect of the EM spectrum on the human body. |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.  During the year students will be assessed on their Working Scientifically skills.  These include: Graph drawing, practical planning, error identification, Conclusion writing. | | | | | | | | |
| **Links to other units in KS3/4.** | Yr 7- What am I  Yr 7 - Sports Science  Yr 8- Hospital  Yr 8 – Farm  Yr 9- Cells  Yr 9- Organisation  Yr 9- Energy  Yr 11- Ecology | Yr 7- Scientist  Yr 8- CSI  Yr 9- Bonding  Yr 9- Atoms  Yr 9- Quantitative chemistry  Yr 10- Rates | Yr 8 – Power  Yr 9- Atoms  Yr 10 - Waves | Yr 7- What am I  Yr 8- Hospital  Yr 9- Cells  Yr 9- Organisation | Yr 7 – Oceans  Yr 7 – Sports  Yr 8 - CSI  Yr 9- Atoms  Yr 10- Chemical reactions  Yr 10 – Organic chemistry | Yr 7- Cars  Yr 7- Space  Yr 8 – Theme | Yr 7- What am I  Yr 7- Dinosaurs  Yr 7- Zoo  Yr 9- Cells  Yr 9- Infections  Yr 10- Biological reactions  Yr 11- Ecology | Yr 7- Dinosaurs  Yr 7 – Oceans  Yr 8 - CSI  Yr 8 – Power  Yr 9- Bonding  Yr 9- Atoms | Yr 7 – Oceans  Yr 8- Disco  Yr 9- Energy  Yr 10- Atomic Structure  Yr 11- Electromagnetism |

**TNHA Curriculum Planning Document** Subject: Science Year: 11

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| **Timescale** | **Autumn** | | | **Spring** | **Summer** |
| **Prior Learning (from KS2/3)** | Yr 7- Zoo  Yr 8- Dinosaurs  Yr 9- Chemical Reactions  Yr 10- Biological reactions  Yr 10 - Inheritance, variation & evolution | Yr 7- Scientists  Yr 7- Earth  Yr 8- CSI  Yr 9- Atoms | Yr 8 Disco  Yr 8 Power  Yr 9- Electricity  Yr 10 - Waves | GCSE Specification- Trilogy AQA 8464 | |
| **Topic/ Unit title** | **Biology**  Ecology  Classification, Distribution, Pollution and deforestation | **Chemistry**  Analysis & Earths Resources  Chromatography and gas tests.  Life cycle assessments,  earth’s atmosphere and climate change | **Physics**  Magnetism and electromagnetism  Magnetic fields, Flemings left hand rule and electromagnetism. | **Revision and Exam Preparation**  Students will complete revision activities to develop further knowledge and test areas of weakness from mock exam testing. | |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | Impact of pollutions on ecosystems. Humans responsibility to avoid pollution and stop deforestation.  Sustainability. | The importance of fossil fuels to human society and the impact their usage is having | The use of magnetic fields in navigation. | The Importance of revising for GCSE Science.  The use of GCSE science in college applications.  How to deal with stress during exam times. | |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.  Mock Exam Autumn Term | | | Mock Exam Early Spring Term.  Exam questions and QWC questions during lesson activities. | |
| **Links to other units in KS3/4.** | Yr 7- Zoo  Yr 8- Dinosaurs  Yr 9- Chemical Reactions  Yr 10- Biological reactions  Yr 10 - Inheritance, variation & evolution | Yr 7- Scientists  Yr 7- Earth  Yr 8- CSI  Yr 9- Atoms | Yr 8 Disco  Yr 8 Power  Yr 9- Electricity  Yr 10 - Waves | Prior GCSE Content. | |